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LOUISIANA Conservationist

LOUISIANA WILD LIFE AND FISHERIES COMMISSION

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Conservation Pledge

I give my pledge as an American to save and faithfully to defend from waste the natural resources of my country—its soil and minerals, its forests, waters and wildlife

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Speckled trout are probably the most sought-after salt water fish in Louisiana. They are taken in bayous, dead end canals, coastal bays and lakes, as well as in gulf waters. They are also called spotted sea trout in some parts of the country. Unlike many salt water species, they take natural bait as well as artificials. In Louisiana, best natural bait is shrimp. Live shrimp is preferred by most anglers but speckled trout will take fresh dead shrimp, frozen shrimp, as well as live, small croakers and minnows.

(Cover photo by Bob Dennie)

LOUISIANA Conservationist

LOUISIANA WILD LIFE AND FISHERIES COMMISSION

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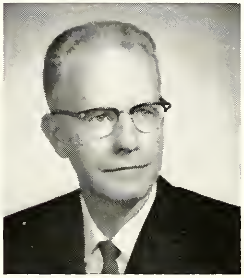
Conservationist EDITORIAL

A BODY OF WATER can only support a certain poundage of fish depending on the lake's fertility. This poundage can consist of many species and sizes. At times one or two species will reproduce faster and become more abundant than the others, and since the total poundage has to remain the same, there will be a reduction in the other species. The job of the fish biologist is to keep all species in such a balance, that the harvest of desired fish is kept at a maximum.

One of the major problems in fishery management is the control of commercial or rough fish. Any fisherman who has fished in new lakes in Louisiana from their opening through several succeeding years can recall that excellent catches of game fish were common in the early years. After reaching a peak of good fishing, a decline in good catches follows. Most often this decline is caused by a buildup in the non-sport fish, which crowd out the game fish. In most cases where this has happened in Louisiana lakes, a large scale removal of commercial and rough fish resulted in an increased abundance of game fish. Several methods are used to remove these commercial and rough fish. Chemicals can be used to kill them. This procedure is an important tool in fish management. It is costly and wasteful and therefore, is feasible only for selected water areas where conditions prohibit other types of control. By fluctuating the water level, the number of fish can often be reduced. In this procedure, the fish are crowded into a smaller water area where the predator fish can utilize the smaller ones as food. But this method is not possible in all bodies of water, and is usually only effective in reducing the number of smaller fish. Another method of restoring the proper fish balance is to have the lake opened for commercial fishing. The commercial fishermen remove the large and numerous fish species which have not been taken by the sport fishermen. Because they are not harvested they grow in size and increase in numbers. The initial removal of these fish will restore balance to the lake's population. Continued fishing of these commercial species will perpetuate this balance by maintaining a proper proportion between commercial and game fish. With the sportsmen fishing the game fish and the commercial fishermen controlling the other species, all life in the lake has room for expansion and food on which to grow. An expanding fish population makes the most productive and rewarding fishing for all. This is good conservation as it utilizes all of the resources with a minimum waste and expenditure. In this way the commercial fishermen are helping the sport fishermen by removing these commercial and rough fish and making room for more game fish resulting in better fishing. The commercial fish removal also provides a livelihood for the commercial fisherman and his family. The fish protein which was harvested now becomes available for human and animal consumption for our ever expanding population.



LESLIE L. GLASGOW
Director

To cite two cases of commercial fishing in lakes that had been closed: Lake Verret, Assumption Parish, was opened to commercial fishing on a permit basis for thirty days in March of this year. This lake had been closed since 1954. Thirty-three permits were issued. These fishermen removed over 159,000 pounds of commercial and rough fish of which 123,000 pounds were gar and 28,000 pounds of buffalo. Because of the removal of these fish, it is predicted that sport fishing will improve greatly within the next few months since the competition for food and space has been lessened. Lake Bruin was opened to commercial fishing for approximately 120 days on a permit basis in early 1967 and the fishermen removed 115,000 pounds of fish of which 100,000 pounds were buffalo and carp and 5,000 pounds of gar. It is now a fact that the catches in Lake Bruin are better because of the removal of these fish.

Both phases of fishing, commercial and sport, are valuable assets to the state. Commercial fishing in our state is estimated to be a 32 million dollar industry. The total monetary value of the sport fisheries to Louisiana is over 82 million dollars, but of even more importance is the recreational value which cannot be measured in dollars and cents.

All of the previous work, all of the present work and all further work in fisheries was and is designed so that sport and commercial fishermen in Louisiana will be able to catch a maximum amount of fish without hurting future fisheries. This is true conservation—the full utilization of all species and the protection of brood stocks so that the harvest will be continuous. +

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Wildlife
NEEDS
LAND AND WATER!

Jerry G. Jones

(Editor's note:) Mr. Jones, a Cameron Attorney and Chairman of the Wild Life and Fisheries Commission, was a featured speaker during The Louisiana Wildlife Federation convention held last month in Shreveport. This article is from the speech he delivered to delegates and guests attending that conference.

A WISE MAN once said a person should buy land when he could because they are not making any more!

This is particularly true for sportsmen. New land uses are consuming thousands of acres each year and drainage is rapidly cutting into areas where fishing was once abundant.

Since 1960, the Louisiana Wild Life and Fisheries Commission has acquired 100,000 acres to be managed for all time for wildlife. But is it enough? I think not. Here is the present situation and a glimpse of what can be anticipated in the future.

"Wildlife Commission purchases 15,000 acres of land"! "Wildlife Commission purchases 60,000 acres of Land!"

These were startling headlines in 1960 and 1964 as the state became the owner of what is Russell Sage Wildlife Area and Saline Wildlife Area. With the purchase in 1960, your commission embarked upon an aggressive search to convert to public ownership thousands of acres of woodland and swampland to be managed for fishing, hunting and general outdoor recreation.

What provoked a change in our usual beliefs that private ownership should prevail—that public ownership should not compete with private ownership. The apparent attitude of the commission was that the state should step in and acquire ownership *only* when the needs and demands of the people have not been met or cannot be met through private ownership.

Until recently, the supply of land under private ownership was sufficient for the demands of hunting, fishing and recreation. Louisiana has only about 48,500 square miles and is 31st in size when compared to other states. However, a large percentage of the area in Louisiana is adaptable for use for these purposes, and consequently we were better able to meet the demand than some states with larger acreage. Likewise, the Commission was successful in obtaining leases on 800,000 acres and utilized this acreage for wildlife management purposes. We still employ this procedure whenever possible. However, this source of land for management has now dwindled. What has happened?

Giant stands of ancient cypress and other timber in the Red River Wildlife Management Area, acquired by the Commission, will provide excellent deer, squirrel, rabbit and woodcock hunting for future generations. Other places in the area offer fine fishing.

Our modern day needs for land have exploded, resulting in keen competition from all sides for every acre of available land. Agriculture, highways, urbanization, industry and flood control, drainage and navigation all are major competitors.

Agriculture: There are approximately 16 million acres of forest land in Louisiana. In the four year period 1962-1966, 688,293 acres were cleared for agricultural purposes. Catahoula Parish had 98,000 acres cleared during this period; Concordia 40,000, East Carroll 30,000, Madison 45,000, Tensas 46,000 and so on.

We are told that in 25 years all hardwoods in the North Delta will be cleared! This trend is not confined to North Louisiana; it is steadily moving south. For example, during this four year period, 38,000 acres was cleared in Avoyelles and

This was the dedication scene when the Louisiana Wild Life and Fisheries Commission officially opened 60,000 acres that comprise the Saline Wildlife Management Area, now permanently the possession of the Commission and open to hunters, fishermen and campers.

37,000 acres in St. Landry. This appears to be some of the keener competition for land use which we have and indications are that there will be more competition as technological advances in agriculture permit use of once "marginal lands".

Highways: The U. S. super highways consume approximately 1.6 million acres of right of way—an area larger than the State of Delaware. Enough excavations were made from this right of way to bury Connecticut knee deep! The sand, gravel and stone going into roads would build a wall nine feet thick and 50 feet high around the world.

Urbanization and Industry: We have seen a massive movement from the cities to the country for residential and commercial purposes. A drive through modern Louisiana today assures us that this trend will continue.

Marker sign at the Russell Sage Wildlife Management Area, consisting of 15,000 acres. This direct acquisition marked the start of the Louisiana Wild Life and Fisheries Commission's land acquisition program that now includes 100,000 acres of land permanently dedicated to wildlife and recreation.

Flood Control, drainage and navigation: We see the dreams of controlling some of the ravages of nature become reality in the great drainage and flood control projects already completed. We are able to assess to many of these a withdrawal of thousand of acres from use for hunting, fishing and recreation.

We also find that, although these forces put the land to different uses, they have one common dimension—the withdrawal of the land is usually permanent! Where we see a conversion of one acre to any of these uses, we can usually consider that there is one acre less available for fishing, hunting or recreation.

In addition to the direct loss of habitat from the clearing of land for these non-wildlife uses, we also often find an indirect destruction of other habitat—the main one being pollution.

We have thus seen the forces that have gnawed at the existing supply of land, resulting in a great decrease in availability.

But, what was happening as we were reducing the number of acres available for hunting, fishing and recreation? Not only was the population as a whole increasing, but that part of the population interested in a gun, a rod or a boat was also expanding in great proportions.

Let's compare 1966 with what is projected for the future. In 1966 Louisiana had a population of 3.6 million. The Louisiana Wild Life and Fisheries Commission sold about 300,000 hunting licenses,

Sign goes up on Red River Wildlife Management Area acquired in 1966. Negotiations are underway for an additional 4,000 acres that will increase the size of the management area to 16,600 acres.

about 230,000 fishing licenses and registered 66,000 boats. In two years from now, we are told that there will be 3.8 million people—an increase of 200,000. It is estimated that we will sell 315,000 hunting licenses, 245,000 fishing licenses and register 85,000 boats or an increase of 15,000 hunting licenses, 15,000 fishing licenses and 20,000 boats.

If you want to really become alarmed project these figures to 1985—to the time when your child or grandchild born today will be prime to take up the gun, the rod or the boat. Our population is estimated to be five million then, an increase of 1.4 million. We will sell 418,000 hunting licenses, 320,000 fishing licenses, and register 160,000 boats, or an increase over 1966 of 118,000 hunting licenses, 90,000 fishing licenses, and 94,000 boats! Now, you draw your own conclusions as to what is going to happen then.

These forces of supply and demand for land will be far out of proportion. We have hardly been successful in keeping up with the present demand, much less keep up with the fantastic expectations of the future.

One conclusion then is obvious: The management of lands under private ownership for fishing, hunting and recreation has not been able to keep the forces of supply and demand at an equal level. For this reason, the Commission entered the field of land acquisition.

Since 1960 your Commission has acquired about 100,000 acres or an average acquisition of 12,000 acres per year. These tracts include: 1960 Russell Sage, 15,000, 1964 Saline, 60,000, 1966 Red River, 12,600, 1967 Spring Bayou 11,900 acres. And I am pleased to say that we have completed negotiations and are all in the final process of acquiring 4,000 acres adjoining the Red River Wildlife management area in Concordia Parish at a price of $925,000. Our people tell us that this last purchase will afford one of the greatest areas for fish and game research in the state.

Where do we go from here? The Commission is constantly looking for suitable areas throughout the state. We want to obtain as much suitable acreage that we can economically manage.

Remember, unless we pursue an energetic land acquisition program, *today, now,* "Sportsman's Paradise" will be yesterday's slogan. ✢

Scenic Spring Bayou Wildlife Management Area in Avoyelles Parish comprises 11,900 acres of prime fishing, waterfowl and hunting country in the state. It was purchased in 1967. Matching federal funds cut the cost to half, because the U.S. Bureau of Sport Fisheries & Wildlife considered the area vital to future recreation.

SPRING SHRIMP SEASON SETTING

Ralph Latapie

A FIFTY-SEVEN DAY Spring Shrimping Season was set by the Louisiana Wild Life and Fisheries Commission at their regular monthly meeting held in Lake Charles on April 23rd. The opening date is May 20 and will continue through July 15. The establishment of the spring shrimp season is an accumulation of actions of the Commission, the shrimping industry and other vested interests and whose efforts are consolidated and reviewed at an annual meeting held in mid-April at the Commission's Marine Laboratory on Grand Terre Island.

By law, the brown shrimp season must be set by the Commission some time to open between May 1 and May 25. It will then run up to 60 consecutive days or no later than July 15.

The basis for deciding the opening date includes forecast of the abundance and projected sizes of shrimp available to the fishermen at the opening of the season. The annual shrimp crops in the Barataria Bay system have been under extensive study since 1962 by Commission personnel at the Marine Lab at Grand Terre Island. During the past few years the sampling techniques developed at the Marine Laboratory have been expanded to include most of coastal Louisiana.

Both the brown and white shrimp spawn in the Gulf of Mexico and go through several larval stages in these waters. They enter the estuaries or nursery grounds as post larval shrimp at a size of three-eighth to five-eighth inch in length. The success of the shrimp crop depends primarily on water temperature and salinity in these estuarine areas provided there is good recruitment of post larval shrimp from off-shore waters. In the estuaries they grow until they are sub-adults. Then they leave the brackish marshes and bays and return to the saltier waters of the Gulf, where they will eventually spawn and complete their life cycle.

Weekly plankton samples are taken by Commission biologists at passes and channels leading from the Gulf to the nursery areas. These samples show the relative abundance and times of peak post larval movements into the nursery areas.

Water temperature and salinity are recorded in the various study areas. Water temperature is a key factor in controlling the growth and survival of shrimp. When water temperatures reach 70° F and hold, growth of brown shrimp begins. Water temperatures are controlled primarily by air temperatures and amount of daily sunlight. Shrimp are found in varying salinities, but do show a salinity preference. The salinity of an area is an important factor in determining whether or not shrimp will use that area as a nursery ground. Salinities are controlled by local rainfall, river stages, prevailing winds, and other physical factors.

Commission biologists make trawl samples in the coastal areas on a bi-weekly schedule on a year-round basis. Sampling is intensified prior to the shrimping seasons. These samples indicate the average weekly sizes and relative abundance of the shrimp on the nursery grounds.

All these factors are considered in making recommendations for the shrimp season. The factors for previous years and the commercial catch during those years are compared with this year's factors. This forms the basis for the year's recommendations.

Laws which regulate seasons, size limits and gear all have one primary purpose: To allow the greatest harvest of shrimp that we can get on a statewide basis, without being detriment to the breeding stock for future years.

Fishing too early or using a small mesh trawl will destroy large numbers of small young shrimp. Certainly a thousand 2 inch shrimp are less valuable to the shrimper than even 30 to 100 shrimp in the four to six inch range. +

WILDLIFE SHORTS

The Southern Flounder is the most important Flounder of our southern market. This species has been known to reach a weight of over twenty-five pounds, although the usual size is five pounds. Its excellent food qualities always commands a good price.

Lustrously silver, the Moonfish, like its relative the Lookdown, is compressed until it has attained an uncanny thinness. It is common along the Louisiana Gulf Coast and may reach a length of twelve inches.

Throughout the Louisiana swamps there are numerous small ridges, especially along the bayous and sloughs, and it is upon these that the inhabitants of the swamp take refuge in times of high water.

Poison ivy or poison oak and some other poisonous plants are quite common in many parts of Louisiana, yet, strange to say, we hear of comparatively few cases of ill effects from them.

The turtle industry in Louisiana is quite a sizeable one and there are several species involved. All eventually find themselves in soups or stews.

Black bass fishing with live minnows or shrimp is still a favored sport in Louisiana and has not been replaced by fancy angling methods.

The small crabs, known as "pea crabs," commonly found in oysters and other bivalves, are not related to the blue crab, but are members of an entirely separate family known as Pinnotheridae.

Where to - How to - When to

GULF VACATION FISHING

D. R. Saucier

THE ALARM RANG EARLY on that July 4th morning. This would be my first fishing day of a month's vacation—to be filled with many fishing days in the fabulous waters off the Louisiana coast.

Employed by the Terrebonne Parish School Board, as an assistant principal in one of the large senior high schools, it had been some three years since I had received any vacation time due to personnel shifts within the system. My long awaited month had finally arrived!

I hastily dressed and hurried out to make a final check on the pick-up and the 18 foot cathedral fiberglass hull with an 80 h.p. outboard. The rig had been purchased a month before and had accumulated its break-in hours.

The night before I had placed in the boat all of my necessary fishing equipment and those basic necessities required to spend one night flounder fishing in the sheltered bays of Timbalier Island. It was my plan to spend a portion of the day fishing, allow myself ample time to set up a shelter, and a few hours of rest before attempting the flounder jaunt.

After brewing a pot of coffee and filling the battered one quart Thermos my 16-year-old son and I were ready to leave. It was 4:00 a.m.

We headed South on La. Hwy. 24 which eventually becomes La. Hwy. 56 towards the parish public boat landing, approximately three miles below Robinson Canal. The facility is excellent, well lighted, with ample parking space. The Parish Police Jury has provided many such facilities for area sportsmen.

Arriving at the landing at 4:30 a.m. there were approximately 20 cars waiting to launch their rigs in the waters of Bayou Little Caillou. Even at this early hour the parking lot was almost filled. The area in and around the launching ramp bustled with activity. Disciples of Isaac Walton wielded screw-drivers and pliers as they made adjustments on sputtering, balky outboards.

Eventually I launched my boat and parked the pick-up truck. As I walked towards the launching ramp one outboard came to life—in reverse gear—and within an instant the aluminum prop had found its way into the plywood side of an adjacent boat. Not too pleasant words were exchanged. I decided to get out of this congested area and quick!

As I turned the boat into the canal and headed down Bayou Little Caillou, I realized that this was one of those rare moments allotted to man. A person could sense the anticipation as the camps along the bayou began to spill out their inhabitants. Bright lights reflected beautifully in the water as anglers scurried with ice chests, beverage cans, tackle boxes and the myriad necessities to spend a few hours of fishing under a torrid Louisiana sun.

Photo by Bob Dennie

A flounder this size is called a door mat by most anglers who fish for flounders. Graced with firm, white flesh; flounders are highly prized for the table. Broiled flounder is considered a Louisiana delicacy.

In the last five years this area has mushroomed with the weekend fisherman's hide-a-way. Initially, campsites could have been leased from the oil, or land companies for as little as $10 a year. But this is not possible anymore since all of the plots have been leased.

A five minute stop at Calais Hebert's Store at Cocodrie for fresh shrimp and we were under way again. Approximately 1 mile from Cocodrie the Houma Navigation Canal intersects Bayou Little Caillou. Heading in a southeasterly direction the canal is well marked through Terrebonne Bay and on into the Gulf.

By 6:00 a.m. the sun shone brightly and it was evident that this was going to be one of those exceptional summer days. Terrebonne Bay, which usually kicks up a few chops with the slightest amount of wind, was calm. The waters of the bay lapped gently at Point Mesche, a sandy knoll approximately a hundred feet or so wide and a few hundred yards long, which provides a virtual haven for hundreds of seagulls. As I moved the boat towards the southern end of the Point it was obvious that other fishermen had fished the point before and knew of its productivity.

I eased the boat an ample distance away from a 16 foot plywood hull and a couple of fishermen in a 14 foot bateau with a battered 10 h.p. outboard. As my 16-year-old was preparing to drop the anchor he turned to me with "Look Dad, they're bringing them in two at a time".

Craig was the first to make a cast. Using a light fresh water outfit with 9 lb. test mono and a shad rig he could get good casting distance and a lot of action on the light tackle. As soon as the artificial hit the water the light duty reel began to growl and the fiber rod took a graceful parabolic arc. The fish proved to be a small 1-½ lb. speckled trout. For individuals who love the out-of-doors, the smell of fresh air, the swaying of graceful boats in blue water, this was truly a sight to behold.

Just being a part of this vast, beautiful, water wonderland was more than ample compensation for our endeavors. Nonetheless, I pushed one of the fresh shrimp over a #7 hook making a long cast towards the sandy point. The heavy lead sinker took the shrimp down as the red and white cork created a disturbance above. My youngster now had another one in tow. As I turned to watch his fish come in I noticed some activity in the water to my left. My next cast landed in the midst of the turmoil and the cork went under. I had found the range! The specks caught on fresh shrimp were slightly larger than the ones pulled in on artificials. From then on it was merely a question of making a cast and reeling in. We were bringing in specks from ½ to 2-1/4 lbs. After 30 minutes of furious action I accidently dropped a cast in shallow water. I reeled in rather slowly as the shrimp bumped along on the sandy bottom. I felt a light thump and set the hook. Within seconds I had a large flopping flounder among our growing collection of specks. This prompted me to change my single hook and cork for a lead weight and double hook bottom fishing rig. The reef proved very productive in flounders. Undoubtedly, tide and water conditions were such that an abundance of flounder had found their way to the gentle slopes of the sand bar.

Within an hour the action subsided somewhat and we decided to fish Point Mast, approximately four miles southwest of our present position since the specks run slightly larger on the outside. Action at the point was more fast and furious than it had been at Point Mesche. Using binoculars I scanned the array of boats in the vicinity. One thing appeared evident, regardless of the type of tackle being used, specks were hitting everything thrown at them.

I decided to fish with a 6½ foot fiber rod and one of the reliable open-face reels. An artificial was attached to the short wire leader as bait. The artificial bait is a jig like affair with a plastic worm pushed over the hook and held in place with a rubber O ring. My 16-year-old son was using a purple colored lure on his fresh water outfit. We cast at the same time and simultaneously the reels changed their chatter as two fine three pounders found their way into our ice chest. The action continued on and on! It would be rather difficult to state how many of the huge yellow mouth scrapsters we pulled in. But when the chest was completely packed with specks and a minimum of ice we pushed towards the second escapade of our trip. It was 11:00 a.m.

Photo by Steve Harmon

Surf fishing Louisiana style. Unlike surf fishermen on both the Atlantic and Pacific coasts, Louisiana anglers simply wade out into the gulf from any of the beaches or coastal islands. Most prefer spinning tackle although there are some that stick to free-spool casting rods. Speckled trout have a tendency to move along the sandy beaches in schools. This is particularly true in the warmer months.

Rather than run southeast towards Wine Island with shallow waters in that area I headed due east towards the well marked Houma Navigation Canal and picked up the markers going south to Cat Island Pass. The Gulf waters were calm as I set a course parallel to beautiful white sand beach of Timbalier Island. I set the throttle at three-quarters position and let Craig have the wheel. Occasionally the waters pounding the concave section of the hull would give the impression that kids were beating on a galvanized tub.

Taking the binoculars I surveyed surf fishermen who were hooking into schools of bluefish feeding along the beach. A couple of 16 footers were at anchor with anglers also pulling in blues. Scanning the structures offshore I could vaguely make out white objects which I assumed were pleasure craft tied to the platforms. When fishing these locations it is possible to catch anyone of the countless species of fish that thrive in the warm Gulf waters. Turning the binoculars again towards the island I observed three youngsters frolicking on the beach. The island abounds in a variety of objects washed ashore from the gulf. It is spotted with beautiful ponds filled with crystal clear water and is a virtual picknickers' paradise.

Maintaining this easterly course for approximately 30 minutes or so we headed into Little Pass Timbalier with the old abandoned light house situated about a half-mile off shore. We moved in very cautiously between the breakers and the western end of East Timbalier. Occasionally, we would stop, raise the motor and push our way slowly towards the bay side of the island. This is an area somewhat difficult to navigate and every possible caution should be exercised to protect the motor's prop and perhaps avoid changing a shear pin.

We anchored the boat in approximately two feet of water in calm Timbalier Bay and proceeded to unload our camping gear. Before too long we had erected a shelter to protect us from the now blazing sun. The camp axe and nails became useful as I stood a couple of masts with appropriate braces with one piece of one by six to be used as a ridge board for the tent.

The afternoon was rather uneventful. I did take time to scout the area and become familiar with the shoreline. Walking in this shallow water while searching the greenish waters of the bay for elusive flounder (which covers itself with sand to lie in wait for small marine animals that constitute its diet) can cause a person to lose his sense of direction at night. Around 8 p.m. the tide started coming in and began filling the bays and coves. A cool light breeze swept in from the gulf making it a pleasant summer night. Stars intermingled with illuminated oil field structures on the edge of the gulf. Behind us natural gas flares in Lake Barre and Timbalier Bay cast a red hue issuing a call to that hardy breed of fishermen who fish those areas at night. Both speckled and white trout are attracted to the flares and school in their vicinity. In the summer months at these flares the angler, the specks, and countless insects attracted by light rendevous, are each determined to out-wit the other.

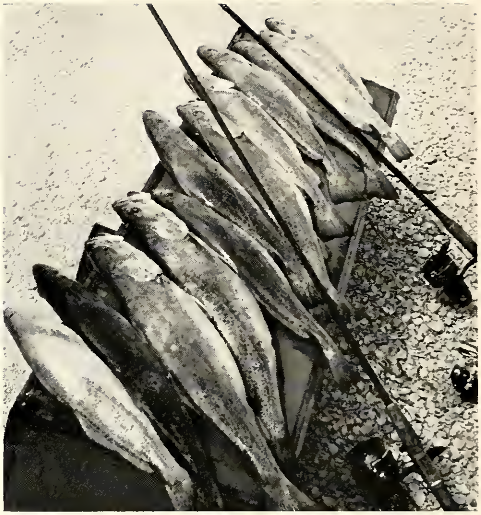


Photo by Gay Batson

These are the sort of speckled trout that Louisiana salt water fishermen seek. They are abundant along the coast, in the coastal bays, lakes and bayous. Fighting speckled fury on light tackle is fine sport.

By 9:00 p.m. we were ready to start the second half of our "fine 4th" excursion. We had outfitted ourselves with the light weight plastic type waders; more so as a precaution against the stingrays that inhabit the Louisiana coast. Our basic equipment included a fish spear, a couple of Coleman lanterns, a line with floater to string our fish, and a flashlight for emergencies.

As we moved into the water the coolness felt pleasant to our warm humid skin. Walking in water 12 to 18 inches the bright rays of the lanterns exposed the smallest of objects within a complex of geometric designs on a chalkboard of sand.

I spotted the outline of our first flounder in the off-white sand. A quick lunge with the "gig" resulted in splashing water as the fish fought for its existence. When the murky water subsided and it was quite evident it was a flounder, I slipped my hand under the fish running the tines between my fingers in order to bring the fish to the surface without dropping it. Anyone who has not fished these waters before should exercise every possible precaution in this type of fishing. What might appear to be a flounder at first glance could actually be a ray.

Pushing our lanterns before us we observed large blue crabs in the shallow waters. The brilliance of the light seemed to stun them as they lay almost motionless on the sandy bottom. Since I had not made any preparations to gather the crabs, a Louisiana delicacy, we continued our search for flounder.

A few yards from our campsite the water of the bay cut somewhat deeper into the island thus providing a few hundred square yards of clear shallow water. I merely assumed that these were small cavities in the sand, debris washed ashore from some distant structure. I had no idea of what I was about to stumble into by accident.

I was using the "gig" as a walking cane putting it before me at regular intervals. My spear came down "dead center" on one of these dark patches. Within a split second the water burst open showering me with spray. My reflexes reacted accordingly and I drove the tines through the fish. The splashing water brought Craig hurrying to my side to see the action. In doing so he stepped on one of the dark areas. The flounder caught Craig by surprise causing him to lose his balance and sit gently in the water still holding the lantern. I picked up my flounder and realized that around us in this cove were all the fish that we wanted.

We moved into the area slowly. Occasionally, I spooked one and it would make for deep water. In a few instances I was able to gig them on the "run". This member of the flatfish family moves rather slowly, and in such a manner so as to provide the two eyes on the same side of its head optimum vision. At this point I would like to share another interesting observation I have noted with respect to the flounder's camouflage. Fish that I have taken from sandy bottom areas will appear to be a solid black on their upper sides while those flounder taken in an area where the bottom is predominantly shell will have a "speckled" look in contrast to their sandy cousins.

The cove provided us with all of the flounder excitement we wished. After cording fish on the long stringer we decided to call it quits at about 11 P.M. It had been a long day! The youngster and I moved back in the direction of the campsite, our fire still burning brightly on the beach. As we tramped through the water both flounder and crabs continued to scurry away.

The coffee placed in the Thermos that morning was still hot and tasted great. It was 11:30 P.M. The boy and I talked about the events of the day. Feeling exhilarated I decided to partially clean the fish by removing the heads and entrials. By 12:30 A.M., I had accomplished my task and placed the 76 flounder in a second ice chest. It was now time to take a rest. The air mattress felt like a bed of clouds as I sensed myself slip off to sleep.

Sportsmen who would like to fish the waters south of Houma can obtain a small map of the area by writing to the Houma-Terrebonne Chamber of Commerce, Houma, Louisiana. A self-addressed stamped envelope should be submitted when making the request.

There are also a number of excellent motels in the Houma area providing accommodations at reasonable rates to sportsmen who would like to remain in the area overnight.

The waters in Terrebonne Parish offer some of the most consistent fishing found anywhere. Both fresh and salt water angling is excellent. ✠

Winter Waterfowl Survey Completed

The annual winter aerial survey of waterfowl distribution in the nation has been completed by the Interior Department's Bureau of Sport Fisheries and Wildlife, but bad weather in all survey areas ruled out any precise conclusion. Flying conditions or visability, or both, were poor.

The survey, conducted with State fish and game departments, other Federal agencies and individuals, covers all important waterfowl wintering areas.

Because censuses cannot be conducted over remote and scattered grounds, midwinter counts are primarily distribution indicators and suggest population changes only for geese, swan, and brant.

The survey findings by flyway: Mississippi Flyway-Poor flying weather added two weeks to the survey. Snow and ice pushed most waterfowl out of northern States to main wintering areas farther south where wide flooding dispersed birds into flooded timber. Dabbling ducks counted this January were fewer than in 1967, but flooded habitat and operational difficulties made the count questionable.

The flyway's Canada, blue, and snow geese populations totaled about the same as 1967.

Louisiana Furs Prompt Women Buying Spree

Fur brokers of New York report that demand for Louisiana muskrat and nutria has improved. They anticipate favorable use for nutria this coming season. Likewise Ted O'Neil, Chief of the Fur Division, reports that the nutria and muskrat take is ample to supply the market. "This looks good since the public has obviously been on a buying spree during the past several months," says O'Neil.

WILDLIFE SHORTS

Rattlesnakes in Louisiana are seldom found any longer in places frequented by people.

The water moccasin, Louisiana's most abundant poisonous snake, can be recognized easily by its black "spade head" and by its white "cotton mouth", which is opened in warning when the snake is cornered.

The small ground rattler can be said to be statewide, but it also prefers the jungle type of forest. Although it follows the small ridges into the swamps and marshes, it does not go into the water as does the water moccasin.

Louisiana Oysters

Despite the silting of many prime oyster beds during Hurricane Betsy in 1966, the Louisiana oyster crop is due for a favorable comeback. The Bureau of Commercial Fisheries of the Department of the Interior issued such a report recently.

Ordinarily Louisiana's oyster bedding grounds produce between nine and ten million pounds of oyster meats, most of which are used by canneries in south Louisiana. The much in demand Louisiana counter stock oysters which are served over the counters of elite establishments throughout the United States are shipped under refrigeration as are the fresh canned oysters which likewise are refrigerated and shipped. The bulk of the oyster meats shipped are produced by Louisiana canneries and undergo a steam canning process by which they are hermetically sealed and do not require refrigeration. The steam canned oysters are dredged from the natural reefs and private leases of Louisiana. At the cannery they are opened by being subjected to steam. The meats are removed and placed in cans and processed.

Many of the oysters for steam canning are provided for long in advance by shell planting which is sometimes carried on by the factories under the supervision of the Louisiana Wild Life and Fisheries Commission which requires that factories bed specified numbers of barrels of shells.

The juice of the oyster, which some do not use at all, is a valuable aid to the digestion. This fact was definitely proved by the French scientist Henri Chopin. Chopin maintained that the beneficial effects of the oyster eaten before meals was due to the elements found in the juice. This was probably the origin of the oyster cocktail served before dinner. Certainly many other dishes are improved by the addition of the finely flavored liquor.

Raw shop oysters require a great deal of cultivation. These are the oysters that are brought to the packing houses mostly by independent growers, removed from the shells and shipped in containers under constant refrigeration to all parts of the United States. These oysters are usually taken from the natural reefs, cleaned and separated and placed on bedding grounds leased from the state. Here they become better shaped and fatter. They are then taken up and brought to the packing houses, opened, packed in containers and shipped. There are as many as 12 to 15 operations in the handling of raw-shop oysters, yet in all of these operations the oysters are never touched by human hands.

The counter stock are those of the highest grade, the most carefully cultivated oysters that are served on the half shell at the oyster counters and in restaurants. These oysters, the pride of Louisiana, are famed world over. ✢

PAN FRIED OYSTERS

2	doz. raw oysters or 2 cans (12 ounces each)
2	eggs, beaten
2	tablespoons milk
1	teaspoon salt
	Dash pepper
1½	cups dry bread crumbs
1½	cups flour
	Lemon Wedges
	Tartar sauce

Drain oysters. Combine egg, milk, and seasonings. Combine crumbs and flour. Roll oysters in crumb mixture. Dip in egg mixture and roll in crumb mixture. Fry in hot fat at moderate heat until brown on one side. Turn carefully and brown the other side. Cooking time approximately 5 minutes. Drain on absorbent paper. Serve with lemon wedges and Quick Tartar Sauce. Serves 6.

Note: Commercial breading may be used. Follow directions on the package.

Quick Tartar Sauce

1	cup mayonnaise or salad dressing
½	cup undrained sweet pickle relish

Combine mayonnaise and relish; mix thoroughly. Chill.

OYSTER STEW

2	dozen fresh oysters or 2 cans (7½ or 8 ounces each)
¼	cup butter or margarine, melted
1	quart milk
	Dash pepper
	Dash paprika

Combine all ingredients except paprika and heat almost to boiling point. Garnish with paprika. Serves 6.

Bays To Kitchen

OYSTERS ROCKEFELLER

This is a dish, really a meal in itself when accompanied by the "fixins". It is an epicurian delight to those who are introduced to it for the first time and a standby for all—that is—if you know the real secret. It would be identified by the old-time Creole bon vivant as "Huitres a la Montpelier."

Scrub fresh oysters in shells well, before having them opened. Drain the oysters and reserve the deep sides of the shells.

Prepare round tin pans (pie pans) by filling them with coarse rock salt. Work down six or more deep shells into the salt. The coarse salt answers two purposes; to keep the shells upright that they may retain the sauce and keep the shells hot while they are being served. Place the tins, salt and shells in the oven to preheat until they are good and hot. Remove from oven and into each shell drop a teaspoon of butter and a raw oyster. Cover the whole oyster with the sauce, bread crumbs and cheese; put in broiler until the tops have browned and the oyster meat starts to shrivel (from 8 to 10 minutes). Serve immediately.

Without knowing it you have mastered the secret of Oysters Rockefeller or any other oysters cooked in their shells with a sauce. The secret is to preheat the salt and shells before proceeding with the sauce and bread crumbs and raw oysters.

The fine bread crumbs are mixed with a small amount of any ground Italian cheese.

THE SAUCE (Oysters Rockefeller)

The sauce is simple. Into a meat grinder set the fine blades, pass two cups drained, canned or fresh spinach and one cup chopped onions. (Whole green onions or chives preferred.) Two cups chopped lettuce, ½ cup chopped parsley, ½ cup chopped celery tops, two whole bay leaves, one teaspoon black pepper, contents of one can of anchovies (small), one tablespoon absinthe, or one teaspoon anise seeds. Mash well product of grinder into ½ pound of butter or margarine in saucepan over very low flame, add juice of two lemons and form into paste with which you cover the oysters. That's all.

OYSTERS CASINO

2 dozen fresh Louisiana Oysters
or
2 cans (12 ounces each)
6 slices bacon, chopped
½ cup chopped onion
¼ cup chopped celery
¼ cup chopped green pepper
2 teaspoons lemon juice
1 teaspoon Worchestershire sauce
4 drops tabasco
Dash pepper
Buttered toast points

Drain oysters. Fry bacon until partially cooked. Add onion, celery, and green pepper and cook until tender. Add lemon juice and seasonings. Arrange oysters in a well-greased, shallow baking dish. Spread bacon mixture over oysters. Bake in a hot oven, 400° F., for 10 to 12 minutes or until edges of oysters begin to curl and topping is brown. Serve with toast points. Serves 6.

SCALLOPED OYSTERS

2 dozen fresh Louisiana oysters or 2 cans (7½ or 8 ounces each)
¾ cup dry bread crumbs
¾ cup unsalted cracker crumbs
Dash pepper
½ cup butter or margarine, melted
¼ teaspoon Worcestershire sauce
1 cup milk

Drain oysters. Combine crumbs, pepper, and butter. Sprinkle ⅓ of the buttered, seasoned crumbs in a well-greased, round baking dish, 8 x 2 inches. Cover with a layer of oysters. Repeat layers. Add Worcestershire sauce to milk, pour over oysters. Sprinkle remaining crumbs over the top. Bake in a hot oven, 400°F., for 20 to 25 minutes or until brown. Serves 6.

CURRIED OYSTERS OVER RICE

6 tablespoons butter or margarine
½ cup finely minced onion
1 cup finely minced red apple
1 teaspoon curry powder
1 teaspoon salt
2 tablespoons flour
3 tablespoons chopped chutney
½ cup cream
1 cup milk
1 pint oysters drained—or 2 8-ounce cans
3 cups hot cooked rice

Melt butter or margarine in saucepan. Add the onion and apples and cook until the onion is tender, stirring frequently. Add the curry powder, salt, flour and chutney and mix thoroughly. Add the milk and cream a little at a time. Cook several minutes stirring constantly. Add the oysters and simmer until the edges of the oysters curl. Serve hot over the rice. Makes 6 servings.

LOUISIANA WILD LIFE FEDERATION

Photo feature by
Bob Dennie

Wyatt Jackson third from left, outgoing president of the Federation, congratulates Arthur Darnsteadt, Jr., West Lake, who was elected president at the organization's annual convention in Shreveport on March 23. Other officers, from left, are Charles F. Buckley, Alexandria, first vice-president, W. H. Anders, Jr., Monroe, second vice-president; Jackson and Darnsteadt; Francis J. Braud, Norco, secretary and Ralph Kling, Sr., treasurer.

Jerry G. Jones, Chairman of the Louisiana Wild Life and Fisheries Commission, addressed the Federation members on Sunday morning concerning the problems of "Land Acquisition".

Dr. Joseph Linduska, Associate Director, Bureau of Sports Fisheries and Wildlife, U. S. Department of the Interior was on hand to speak about the conservation problems from a federal view-point.

Captain Charles Sebastian,
Grand Isle, winner of the
conservation award of the y
the Governor's Award, and
lovely wife Jan. This husb
and wife team have done a m
nificent job of deterring w
pollution and promotion of l
isiana fishing.

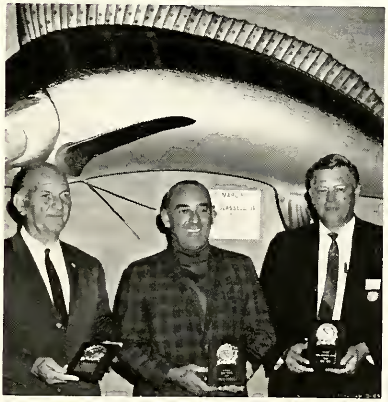
Robert LaFleur, right, Chief of the Water Pollution Division for the Louisiana Wild Life and Fisheries Commission was the main speaker at the Pollution Abatement committee meeting. Also shown are Francis Braud, left and Clint Bridgeman.

T. H. Roger, Norco, Master of Ceremonies and Master of the Cajun stories.

29th ANNUAL CONVENTION

Winners of the Governor's State Conservationist awards were, back row left, Frank Adams, West Lake, Communications, Alton Mangum, Alexandria, Soil Conservationist, Ralph T. Wall, Educator of the year; Senator Jackson B. Davis, Shreveport, Legislator of the year; J. M. "Pete" Menefee, Baton Rouge, Water Conservationist; William F. Mann, Alexandria; Forest Conservationist. Front row left, Walt Day, Norco, Wild Life Conservationist. Captain Charles Sebastian, Grand Isle, Governor's Award, Carl Fontenot, Calcasieu Rod and Gun Club, Organization of the year. Mr. Lytton Dantin, Golden Meadow Junior High School; Youth Conservationist of the Year.

n Hardesty, right, Editor of the Baton
uge State Times was reelected presi-
nt and Bob Dennie, photographer for
e Louisiana Wild Life and Fisheries
mmission was chosen to be the new
e-president of the Louisiana Outdoor
riters of Louisiana. Missing from the
oto is Mike Cook, Baton Rouge who was
ected secretary-treasurer.



Winners of the awards of merit given by the Louisiana Outdoor Writers Association were: Col. Bill Hornsey, Baton Rouge, best feature article, Hurley Campbell, Baton Rouge, best outdoor photograph and also winner of the "Outstanding Conservationist of the Year" award given by the LOWA and Mike Cook, Baton Rouge, best newspaper story.

Bob Chabreck, left, was elected the new president and Guthrie Perry, Grand Chenier was elected secretary-treasurer of the Louisiana Wildlife Biologist Association for 1968. Missing from the picture is Bob Beter, New Orleans, who was elected vice-president.

M. "Pete" Menefee, Commissioner of the
partment of Conservation was presented the
vernor's award as "Water Conservationist of
e Year" by Dr. Glasgow.

Dr. Leslie L. Glasgow, Director of the Louisiana Wild Life and Fisheries Commission is shown here addressing a capacity crowd on "Commission's Programs".

A block-off seine encloses a one acre water area in which chemicals are applied, for the purpose of determining the fish populations.

Fish Management Principles

RESERVOIRS IN LOUISIANA

Dudley C. Carver

LOUISIANA IS BLESSED with thousands of miles of rivers and streams and many acres of oxbow and natural lakes. In not too many years past large, man-made reservoirs began to dot the state.

In 1965 man-made reservoirs in Louisiana totaled 173,001 surface acres. With the advent of the construction of reservoirs, a large number of fishermen abandoned other bodies of water and turned to these waters seeking fishing opportunity. With the ever increasing human population and more leisure time, fishing pressure on reservoirs has increased dramatically in recent years, and is anticipated to increase even more. In order to meet this demand, in advance, the Louisiana Wild Life and Fisheries Commission installed an intensive management program of reservoirs within the state.

Reservoir management is a term used when discussing the disruption of any of the ecological, biological, chemical or physical factors affecting fish populations resulting in an increase in the catch of fish and which will continue for a long period of time. These factors can be changed in various ways according to the body of water and according to the problems that the biologists are attempting to solve.

Reservoir management should begin while the reservoir is on the drawing board. Many problems can be solved at this stage. During the planning stage such things as elimination of shallow water, removal of excessive timber, layout of boat lanes, and launching ramps can be planned. If these are not solved during planning, they become very costly items after the reservoir has filled.

Many problems arising after a reservoir is completed are a direct result of poor design. The fisheries biologist usually enters the picture after the reservoir has filled and fishing conditions are bad. He must then cope with a poorly designed reservoir while trying to create better fishing.

Another important aspect of reservoir management is pre-impoundment surveys of the watershed that is to be inundated. Data is obtained on species of fish present in the watershed, relative abundance of these fish, water quality, and food organisms present. These data are used to formulate stocking plans, detect pollution and predict changes and problems that might occur in the future.

After a reservoir has been well planned, pre-impoundment data studied, and the need for fish proven, stocking with hatchery reared fingerlings is a management tool used. The general public hopes that a newly created reservoir will be stocked with all species of fish suitable for that particular body of water. This is not always the best solution. Stocking species of fish already present does not increase the fish harvest. In Louisiana, watersheds inundated by newly created reservoirs usually have an abundance of rough and forage fish and are usually lacking in predatory fish, especially largemouth bass.

In any stocking program the biologist tries to establish a favorable predator-prey relationship that will result in a balanced fish population. A balanced fish population is one where there is a balance between the prey (bream, minnows, shad) and predators (bass). A balanced fish population will provide good fishing for a long period of time, whereas a crowded fish population produces poor fishing. Poor fishing develops when commercial fish are under harvested and the predators are unable to utilize the prey species because of protection afforded by aquatic plants. Because of large numbers of forage fish and no increase in food, these fish become stunted and are not desirable to the sportsmen.

The Louisiana Wild Life and Fisheries Commission recently completed a pre-impoundment survey of Toledo Bend Reservoir and found that the watershed had a high population of forage and rough fish. After careful study of the pre-impoundment data, it was determined that adequate numbers of "bream" and crappie occurred in the river to sufficiently populate the reservoir.

The only native game fish stocked was largemouth bass. Louisiana and Texas jointly stocked 3,000,000 largemouth bass fingerlings in Toledo Bend Reservoir during the spring of 1967. The bass were stocked to establish an efficient predator in high numbers initially, as far ahead of the forage and rough fish as possible to bring about a favorable balance. Excellent catches of bluegill and crappie have been reported taken from Toledo Bend Reservoir during the spring of 1968.

Warm water game fish in Louisiana are very prolific. For example, a mature female bluegill will spawn approximately 20,000 eggs. These fish rapidly expand their numbers in newly created reservoirs. Based on these facts it can be easily seen that "mother nature" can do a much better job compared to stocking hatchery reared fingerlings.

A fish population in a new reservoir expands rapidly during early years after impoundment. During this time fishing success is best. The reason for this success is because the fish population is increasing in number, weight, and size.

All reservoirs do not produce the same amount of fish. Poundage of fish produced in a reservoir is dependent upon the nutriments which enter the reservoir from the surrounding watershed. Reservoirs in the poor sandy soils of the state produce approximately 100 pounds of fish per acre, while the backwater lakes which receive nutriment rich flood waters produce approximately 400 pounds of fish per acre.

In Louisiana, fishing success in new reservoirs usually declines after about five years. It is important at this time that the fish population be known. Fisheries biologists obtain this information by enclosing an acre of water with a small mesh net and killing the fish within this area with a fish-toxicant. The fish that are killed are collected and analyzed. More than one sample is taken in the reservoir under study. The number of samples taken is dependent upon the size of the reservoir. Shoreline and open water samples are taken in order to include as much diversity of habitat as possible. The samples are taken in the same area each year. The biologist uses this data to determine favorable or unfavorable conditions in regard to the fish population.

The fish population in a reservoir may consist of high numbers of stunted "bream" or gizzard shad that are not desirable. The best method to solve this problem is to completely drain the reservoir and start over. However, with larger reservoirs this cannot always be done because of multiple use purposes of the reservoir. A management tool that has been used effectively in southern states is partial posioning of areas where the stunted fish concentrate or by reducing the strength of the toxicant so that it selectively kills the problem species. A drawback to this type practice is it is costly and produces favorable results only for a limited time.

Removal of commercial and rough fish tends to keep the fish population in balance, affording sportsfishermen greater catches. The webbing is called a gill net.

In many instances an over abundance of commercial fish is creating the problem. This problem can be solved by heavy harvest of the species by commercial fishermen. On several reservoirs in Louisiana there is a conflict between sport fishermen and commercial fishermen. This should not exist. Commercial fishermen remove large poundages of fish that are in direct competition with sport fish. Also, sport fishermen do not adequately harvest these fish and if the commercial fishermen are not allowed to do so a valuable resource is lost. Commercial fishermen should be allowed to fish all types of legal gear that would effectively remove surplus commercial species.

A difficult problem in shallow reservoirs in Louisiana is the growth of submergent and emergent aquatic vegetation. Large amounts of these aquatics affect fishing by providing protection for forage fish against predator fish. If predator fish cannot effectively reduce the forage fish (bream) they increase in number and decrease in size. This results in stunted fish not desirable to the sportsman. Another adverse factor is large amounts of these aquatics render large areas of reservoirs inaccessible to boats for fishing. Water level fluctuation is a management tool which has been used very effectively in Louisiana reservoirs, and other southeastern states, for coping with this type problem. Fluctuation helps control the aquatic plants, benefits the fish population, and increases the fertility of the reservoir.

Two reservoirs this writer is closely associated with where this management practice is conducted are Anacoco Lake in Vernon Parish and Bundick Lake in Beauregard Parish. After five consecutive years of water level fluctuation on Anacoco Lake predatory game fish (bass, crappie) of available size increased from 1.1 pounds per acre to 8.6 pounds per acre. Submergent and emergent aquatics on Anacoco Lake present no access problem to the fisherman. At the conclusion of two consecutive years of water level fluctuation on Bundick Lake the aquatic problem is greatly reduced. Fishermen will enjoy approximately eight weeks of additional open water this spring. Favorable changes in the fish population on this lake have also been noted.

The most recent management tool fisheries biologists in Louisiana are studying is stocking of striped bass and walleye for control of gizzard shad. Most Louisiana reservoirs have an overabundance of gizzard shad. In reservoirs where this condition exists game fish populations suffer because of crowded conditions. In Santee-Cooper Reservoirs in South Carolina, striped bass effectively controlled an overabundant gizzard shad population. Game fish, (bass, bluegill and crappie) in this reservoir maintained high numbers and grew larger.

This management practice in Louisiana is strictly in the experimental stage at this time. These fish have been stocked in D'Arbonne Lake and Toledo Bend Reservoir. Results at present look very favorable, but it will be several years before this practice has widespread use in Louisiana.

Some readers of this article may be familiar with a reservoir where a management practice was carried out or is presently in effect. It may not be the type practice you thought it would be. Some practices inconvenience the sportsman for a short period of time, turn a lake into an ugly sight, and others stink. As an active field biologist, let me assure you that the management practices used on Louisiana reservoirs are not some wild nightmare dreams of the biologist. These practices are put into effect after much study and research. The fisheries biologist has one purpose in mind and that is to improve fishing and make Louisiana truly a Sportsman's Paradise. ✢

Here a fisheries biologist analyzes a sample catch to determine balance of fish populations.

WILDLIFE SHORTS

The cat, particularly one half starved, is one of the greatest enemies of birds, especially of the young.

Bird houses do a great deal to attract birds in the spring when they are beginning to nest.

Bird migration has for centuries been one of the mysteries of the world and still continues to be. Why birds do this we do not know. Many theories have been advanced, none of which has proven satisfactory.

Most birds such as warblers and thrushes travel by night and feed by day. Ducks and geese travel either by day or by night.

Plumage of birds sometimes differ with different sex and sometimes it changes in the spring to summer plumage and in the fall to winter plumage.

Almost every person in Louisiana is familiar with the brown pelican. It is the state bird and also found on the state seal.

WILDLIFE-O-GRAM

LOUISIANA'S CHAMPION OAK

Louisiana's new champion live oak tree is "Seven Sisters Oak" and may be seen at Mandeville. It is on property owned by Tom Dobey. It measures 37 feet in circumference. Oldest and largest trees listed as state and national champions are measured in circumference and not diameter.

SNAPPER CANNOT HIDE HEAD NOR TAIL

Louisiana's famous snapping turtle can feed only under water and unlike most turtles, cannot withdraw its head or its tail into its shell.

CONSERVATION BOOKS

There is a wealth of material pertaining to virtually every purpose encompassing the entire field of conservation education. Unfortunately, until now there has been no comprehensive and ready reference source which would enable people concerned with conservation education to ascertain what publications were available. Now you have it, write Interstate Printers and Publishers, Inc., 1927 North Jackson Street, Danville, Illinois 61832, or refer the Library of Congress to Catalog Card No. 68,19052 for selected bibliography of source materials under the title "Conservation Education; A Selected Bibliography." Cost $2.50, less educational discounts, at the Interstate Printers and Publishers.

MUSEUM DIRECTOR WANTED

Director for new $300,000 natural history museum and center for environmental studies, scheduled to open in December, 1968. Director responsible for staff: planetarium administrator, naturalist, preparator, secretary, laboratory assistant, driver-helper, custodian and grounds keeper, and volunteer workers. Advanced degree in area of natural science preferred. Museum experience not required. Director's research encouraged. Supported by city, parish school board, and private museum association. Budget for first year: $80,000. Salary: $9,000-$12,000. Position available immediately. For particulars, write:

Lafayette Natural History
Museum and Planetarium Commission,
Office of the Mayor,
733 Jefferson Street, Lafayette, La. 70501

EDITOR'S BOOK REVIEW

"Fishing with the Fly" with sketches by lovers of the art, plus color illustrations of standard flies, collected by Charles F. Orvis and A. Nelson Cheney, is a revision of a book originally published in 1886. Previously available only in rare book stores, it is an inspirational and informative tribute to the sport and readable from front page to back. Now available through Charles E. Tuttle Company, Publishers, Rutland, Vermont.

Two buildings like the one above have been constructed on the Saline Wildlife Management Area for housing resident area biologist and game agent.

Photo by Bob Dennie

Concrete forms are now being laid for the construction of the new Monroe office which is being built to replace the old building that was destroyed by fire early in the year.

Photo by Cliff Williams

Commission Announces Construction Projects

Robert Dennie

CONSTRUCTION PROJECTS ranging from Grand Isle to Monroe and Lake Charles to Jena and representing a capital outlay of approximately one and one-half million dollars have been completed or are nearing completion. These Wild Life and Fisheries Commission installations will help meet the increasing demand for more services in the wildlife resource field.

In 1967 a contract was let for the construction of a new office building for the district seven office to be located in Baton Rouge. Construction began in early 1967 and is now well under way. Work has also begun on the Monroe District Two office building and the Lake Charles District Five headquarters which will replace the former DeRidder site.

The Saline Wildlife Management Area, located northeast of Alexandria, is now in its final stages of completion with the recent addition of two residences which house the area biologist and game agent and two other larger buildings to be used as a work shop, storage areas and bunk houses.

This is a newly constructed workshop, generator loft and utility building at the Marine Laboratory. It replaces similar facilities destroyed during Hurricane "Betsy."

Photo by Albert Tullier

Lake Charles will be the new headquarters for the district V office as it will replace the former headquarters that was located in DeRidder.

hoto by Joe L. Herring

Hurricane “Betsy” did extensive damage to he marine research laboratory at Grande Terre ecessitating the construction of a new combinaion work shop, utility and generator loft to relace a similar facility destroyed during the terible hurricane. A new building for drying and toring seines, trawls and nets was also contructed as well as a new lumber shed.

In early November the commission found it ecessary to repair the earthen dam on Little iver just Southeast of Catahoula Lake in cenal Louisiana. This dam, located at French ork, was installed to maintain the proper water evel on the lake to insure prime conditions for he hundreds of thousands of migrating waterowl that winter here every year.

Down at the mouth of the Mississippi River, he Pass-A-Loutre shooting grounds complex has dded a new all-aluminium camp for public huntrs. This new addition replaces one destroyed uring Hurricane Betsy in 1965. A bulkhead has een constructed alongside the main warehouse nd boat shed which will help protect these intallations from tidal waves and boat washes.

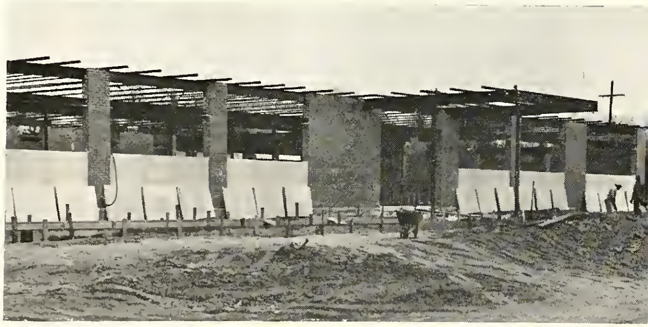
A new residence for headquarters personnel as been completed on the Rockefeller Wildlife efuge along with the construction of additional nimal pens, a hurricane-proof storage area and hree stop-log type concrete water control strucures. ✠

he earthen dam below Cataoula Lake will help maintain rime waterfowl conditions on he lake.

Photo by Bob Dennie

This new facility is for drying and storing seines, trawls and nets at the Marine Laboratory.

Photo by Albert Tullier



Work on the new Baton Rouge commission office building is moving along at a steady pace and should be completed in the near future.

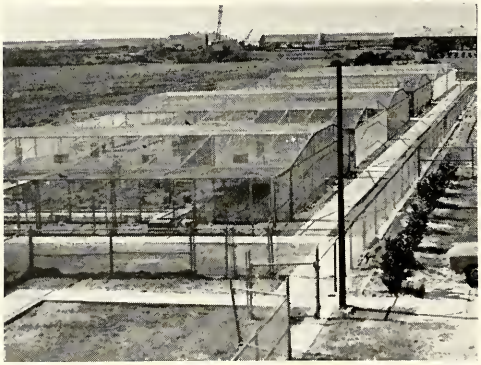
Photo by Joe L. Herring

A combination bunkhouse and workshop has been completed on the Saline Game Management Area located in LaSalle and Catahoula Parishes.

Photo by Bob Dennie

A new bulkhead has been installed in front of the equipment sheds at the Pass-a-Loutre headquarters to prevent erosion.

Photos by Allen Ensminger



Additional animal holding pens have been constructed at the main headquarters' site of the Rockefeller Refuge.

Three stop-log type concrete water control structures have been completed in impoundments on the Rockefeller Refuge.

An elevated equipment storage platform has been completed at the Rockefeller Refuge headquarters to provide safe storage of refuge equipment during hurricanes.

New public hunting camp has been installed to replace facilities destroyed by Hurricane Betsy on the Pass-a-Loutre Waterfowl Management Area.

Additional resident building is nearing completion at the Rockefeller Refuge headquarters.

THE CLEAN WATER TEAM

Thomas J. Gilbert

THE STAFF MEMBERS of the Louisiana Wild Life and Fisheries Commission's Water Pollution Control Division are fact finders for technical advisers to, and the enforcement arm of the Louisiana Stream Control Commission. They are biologists, chemists, engineers, and waste control investigators.

Citizens who have tendered water pollution complaints to the Wild Life and Fisheries Commission know, at least in part, what these employees do. So do those industries who discharge waste waters to our streams and water bodies. (The discharge of domestic sewerage is regulated by the Louisiana State Board of Health.) For the benefit of those who do not understand the relationship between the Louisiana Wild Life and Fisheries Commission, its Division of Water Pollution Control and the Louisiana Stream Control Commission and their respective responsibilities relative to water pollution abatement and water quality considerations, an explanation is in order.

The Louisiana Stream Control Commission, chaired by the director of the Louisiana Wild Life and Fisheries Commission, is the water quality control authority for the State of Louisiana. Other members of the Commission are the heads of state agencies listed below or their designated representatives:

1. President of the State Board of Health
2. Commissioner of the Department of Conservation (which governs minerals and ground water)
3. The Attorney General
4. Commissioner of the Department of Agriculture
5. Executive Director of the Department of Commerce and Industry
6. Director of the Department of Public Works

The chief of the division serves as executive secretary of the Stream Control Commission. The Division of Water Pollution Control serves as the research, investigative and the enforcement group for both the Louisiana Wild Life and Fisheries Commission and the Louisiana Stream Control Commission in matters pertaining to water pollution and water quality.

Now, if you are not too confused by this attempt to unconfuse you as to who is responsible for policy making and the granting of permits to discharge, we will get back to our story—the story of those handful of people who work as a team to carry out this awesome responsibility of cleaning up your water and maintaining it at high quality levels.

Let's begin with the laboratory staff. Here you have three of the best water quality "detectives" in the nation. This section is headed by Robert Kuss, chief chemist. Then there is Jim Mathis, "on loan" from the Division of Oysters, Water Bottoms and Seafood, Chemist II, with twelve years of experience. A more recent addition to the laboratory staff, Joe Belka, is beginning to cover the water analyses field.

There are three biologists and an engineer on the staff. Jake Yelverton, biologist, can be located through the Fish and Game Division District Office in Monroe. Dale Givens, biologist and pilot, can usually be seen wherever there is a pollution problem between Texas and Baton Rouge. The easiest way to locate Givens is through the Division of Water Pollution Control office in Baton Rouge. The division engineer, Darrell B. Reed, works statewide when needed; when not surveying brine discharges from oil fields, one of many duties. Reed takes care of water pollution problems in west central Louisiana. He can be reached through the Fish and Game office at DeRidder. The pollution biologist in the New Orleans area is Thomas Bradley. He can be located in the New Orleans office.

That brings us to the unhearlded pollution abaters, those who do the spade work and are an integral part of the grass roots of your pollution abatement program. They are the waste control investigators.

In Minden there is Eddie Goodwin. P. A. Paul, located at Jena, keeps tabs on water quality in central Louisiana and Larry Racca in Lake Charles has a double handful of industrial discharges to contend with.

In the rice growing area of Louisiana the farmers sleep better at night knowing that Lubert Reed from Crowley and Rene Bourriague from Lafayette are keeping a watchful eye on the quality of irrigation waters so necessary in rice cultivation.

That man you have seen checking the sugar mill discharges and oil fields in the cane country is Leslie Sewell who works out of Thibodaux.

Warden Dixon covers that area from the west Atchafalaya Basin levee to the Airline Highway between Baton Rouge and New Orleans. That is when he is not accompanying division biologists on biological and chemical surveys throughout the state.

Albert Howard, located in Bogalusa, keeps a watchful eye on those fine fresh water streams in the "Florida" Parishes.

The division is supervised by a Chief, Robert A. Lafleur, and his assistant, the writer. Secretary to the division is Mrs. Frances Rangeley.

There you have it. Eighteen people, including the secretary, charged with the responsibility of cleaning up and keeping clean your waters in the State of Louisiana. ✢

Louisiana's Outer Gulf, Rises as Fishermen's New Frontier - - -

Ready to battle a big one. Fishing for billfish out of South Pass calls for heavy tackle and plenty of stamina. This angler is anxiously waiting for a big one to strike.

BIG GAME FISHING OFF SOUTH PASS

William S. Perret

THE OYSTER, WATER BOTTOMS and Seafoods Division of the Louisiana Wild Life and Fisheries Commission with the assistance and cooperation of members of the New Orleans Big Game Fishing Club initiated a study to collect data on big game fish caught off South Pass of Louisiana's Coast during the summer of 1967. This investigation was prompted by the tremendous fishing effort and catches being made out of the mouth of the river and undertaken so that more biological information could be obtained on these valuable fishes.

Information on length, weight, sex, and food habits was obtained on fishes brought into the Port Eads weighing station. Port Eads is located on South Pass near the mouth of the Mississippi River and is the headquarters for the New Orleans Big Game Fishing Club.

For the last several years members and guests of this fishing club have been making catches of blue marlin, white marlin, sailfish, Allison tuna, bluefin tuna, blackfin tuna, wahoo, dolphin, and Mako shark, never before realized as being available to this fishery along the coast of Louisiana. During this time Louisiana fish records were virtually rewritten for these species of fish. Each year finds records toppling as larger fish are landed and registered.

Table 1 presents a summary of the data collected on these fishes during the summer of 1967. The data shows that females made up the majority of the catch for blue marlin, white marlin, sailfish, Allison tuna, and wahoo, whereas males dominated the catch for dolphin. The table also shows the month in which the largest number of a species was taken. For example, July was the best month for white marlin; 64 fish were caught.

Data on stomach analysis is presented in Table 2. This shows which organisms were most abundant in the stomachs of the fishes examined. Fishes made up the bulk of the food for all the big game species studied. Invertebrates (squid and blue crabs) were also important food items for some of the fishes. In some cases, stomachs contained large numbers of squid. However, when placed on a volumetric basis, fishes were the most important food items.

Marlin and sailfish, often referred to as billfishes, are among the world's most popular marine game fishes. Most are also valuable food species. They are members of the family Istiophoridae, whose members are characterized as having bills, which are rounded in cross section, and by the presence of two ridges on each side of the caudal peduncle, just in front of the tail.

Much remains to be learned about the behavior and life histories of the billfishes. It is known that the white marlin, blue marlin, and sailfish are migratory; in some cases, these movements are thought to be feeding migrations.

Billfishes are for the most part fish eaters, and often use the bill as a club to maim their victims as they rush through a school of smaller fishes.

The sailfish is undoubtedly the most easily recognized billfish because of the extremely long rays of the dorsal fin as well as the dark spots covering the fin. The pelvic or ventral fins are very slender and longer than the pectorals, and fit into grooves under the body. The average size, landed from this area, is from 30 to 50 pounds and 6 to 8 feet in length. The largest fish caught during this investigation weighed 75 pounds.

The white marlin may be distinguished from its larger cousin, the blue, by the conspicuous lateral line, the rounded tips of the first dorsal and anal fins, and by the dark spots on the dorsal fin. The average size here ranges from 40 to 70 pounds and 6 to 8 feet in length. The largest white caught during this investigation weighed 134 pounds, and was a new state record.

The blue marlin is the largest member of this family caught off the Louisiana Coast. This fish generally occurs solitary or in pairs and is much bulkier for length than the white marlin. It is identified by the absence of the lateral line, and has vertical bars along the length of the body. The average size landed here ranges from 200 to 400 pounds and 9 to 11 feet in length. The largest blue caught during this investigation weighed 563 pounds.

Tunas are placed in the family Scombridae. Members of this family range worldwide in tropical, temperate, and even cold seas. Whether they are found at the surface or in the depths is generally determined by water temperature and the composition of the pelagic community. These fish are excellent sport fish and also contribute to a valuable commercial fishery.

Tunas are characterized as being rapid swimmers and having a sleek, cigar shaped, streamlined body followed by a narrow caudal peduncle, and a large, strong tail sharply divided into individual lobes. The second dorsal and anal fin are followed by a series of small finlets.

The Allison tuna is characterized as having a long flowing second dorsal and a long anal fin which sometimes extends back to the tail. The average size landed here ranges from 80 to 100 pounds and 4 to 5 feet in length. The largest caught during this investigation weighed 150½ pounds.

The bluefin is the largest tuna caught off the Louisiana Coast. It is characterized by its large size, red meat, completely scaled body, and short pectorals, anals, and dorsal. Since only two bluefins were caught during the 1967 study, it was not feasible to calculate an average size for the Louisiana Coast.

Aboard comes a 146½ lb. yellowfin tuna. In a single decade, Louisiana has attracted international attention as one of the World's most productive big game fishing spots.

Photos by Bob Dennie

Port Eads at South Pass is headquarters for most big game fishermen. During tournaments sponsored by the New Orleans Big Game Fishing Club, there are often as many as 60 to 70 fishing cruisers, fitted with outriggers.

TABLE 1. BIG GAME FISH CAUGHT OFF SOUTH PASS

	June *Number Caught*				*July* *Number Caught*				*August* *Number Caught*				*Total* *Number Caught*			
Species	*Male*	*Female*	*Unknown*[1]	*Total*	*Male*	*Female*	*Unknown*[1]	*Total*	*Male*	*Female*	*Unknown*[1]	*Total*	*Male*	*Female*	*Unknown*[1]	*Total*
Blue Marlin	4	5	4	13	0	10	1	11	1	13	4	18	5	28	9	42
White Marlin	8	4	14	26	9	33	22	64	3	9	11	23	20	46	47	113
Sailfish	0	1	1	2	6	14	5	25	4	5	10	19	10	20	16	46
Allison Tuna	0	1	4	5	8	13	7	28	4	4	14	22	12	18	25	55
Bluefin Tuna	0	0	0	0	1	0	1	2	0	0	0	0	1	0	1	2
Blackfin Tuna	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	1
Wahoo[2]	3	2	3	8	4	10	61	75	1	1	11	13	8	13	75	96
Dolphin[2]	9	5	41	55	23	2	98	123	7	3	44	54	39	10	183	232
Tarpon	0	0	0	0	2	0	0	2	0	0	0	0	2	0	0	2
Mako Shark	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	1
Barracuda	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	1

[1] Unknown means that lack of time prevented internal examination.

[2] Many more caught but were not brought into the weighing station.

The blackfin is a small tuna, generally weighing only 5 to 15 pounds. Very few have been caught off the Louisiana Coast. This fish has rather long pectoral fins, large eyes, and a completely scaled body.

Another member of the family Scombridae is the wahoo. This is a fast moving, very elongated tuna type fish. It is found worldwide in tropical and temperate marine waters. The wahoo has a long body, beaklike snout, and large teeth. The average size ranged from 15 to 30 pounds and 3½ to 4½ feet in length. The largest wahoo caught during this investigation weighed 65 pounds.

The dolphin is a member of the family Coryphaenidae. It is a very fast moving oceanic fish which occurs solitary and in schools. The adult dolphin has a long dorsal fin of many rays which extends down the back; it also has a forked tail and a beautiful bluish color that is lost shortly after the captured fish is pulled on deck. The adult male has a decidedly squarish head, whereas the female has a more rounded head. The average size of the fish measured during the summer of 1967 was 20 to 30 pounds and 4 to 5 feet in length. This is considerably larger than the average size caught along the entire Louisiana Coast, which is probably only around 5 pounds. The largest dolphin caught during the investigation weighed 53½ pounds.

Results from the 1967 investigation have provided valuable data on these important pelagic fishes. A continuation and limited expansion of this study will be conducted during the summer of 1968, to help augment the data already compiled. Several years of this type of data in addition to other types of information are necessary for this study to be meaningful. We propose to continue this cooperative effort to fully understand the life histories of the species comprising this valuable reasource within our limits for its best development and utilization. ✛

TABLE 2. FOOD ITEMS FOUND IN STOMACHS OF BIG GAME FISH

Species	*Number of Stomachs Examined*	*Primary Food*	*Secondary Food*
Blue Marlin	32	Dolphin	Hardtail jack
White Marlin	66	Squid, Hardtail jack	Dolphin
Sailfish	32	Hardtail jack	Squid, Cutlassfish
Allison Tuna	29	Squid	Hardtail jack
Wahoo	21	Hardtail jack	Squid
Dolphin	38	Blue crab, Hardtail jack	Squid, triggerfish

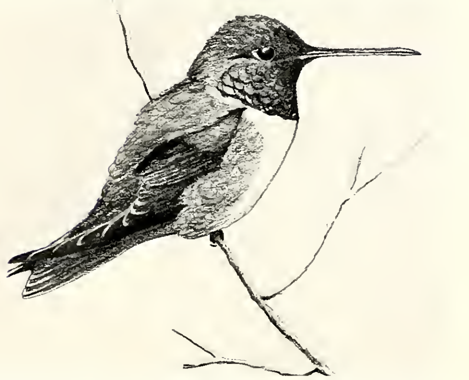
Careful rigging of leaders, bait and lines is a traditional practice of big game fishermen. It means the difference between landing or losing a big blue marlin, a white marlin, a sailfish, bull dolphin or wahoo. Those are the fish big game anglers are after. Included in recent years is the Mako Shark, long considered a game fish.

The Bird of the month

RUBY-THROATED HUMMINGBIRD

Archilochus colubris

Charles R. Shaw



THE HUMMINGBIRDS are the smallest of our Louisiana birds and one might even be mistaken for a large sphinx moth or vice versa, in the late evening as they feed from the flowers. The long bills and highly modified tongues are especially adapted for the task of probing deep into flowers and feeding on the nectar as well as those tiny insect forms which may be present. Of course the unique and characteristic ability to hover in place at will while feeding easily distinguishes these little birds from all others.

The Ruby-throated Hummingbird gets its name from the bright ruby-colored throat of the male, which however may look velvety black from some angles under certain light conditions. This is because the color in this case is a function of the physical structure of the feathers refracting the light rather than being a pigment. The back and tail of the male are a bright green with the underparts mostly grayish although there is a white patch on the breast. The tail is forked. The female, who lacks the ruby throat patch, is emerald-green above and considerably lighter below than the male and she has a tail which is somewhat rounded with the three outer tail-feathers tipped with white. The immatures resemble the female although young males may occasionally have a few red feathers on the throat.

These beautiful little birds are primarily summer residents in our state of Louisiana, usually arriving in early March and leaving in late October for their winter home in the tropics.

The males seem to arrive first in the spring and when the females join them they are treated to an elaborate courting dance which may consist of the male flying in an arc before the perched female as if he were a pendulum on a string. The size of the arc may vary from a few feet to thirty or forty and he may zoom high into the air at the end of each swing.

The duties of nest building seem to be carried out by the female. She uses down and soft plant material bound in place by spider webs or even tent-caterpillar webs. The outside of this tiny well made structure is covered with lichens and it blends into its natural surroundings so well that it is very difficult to locate.

The clutch of two small white eggs about the size and shape of navy or soup beans is incubated by the female in the soft warm nest. The male may sometimes be seen in the vicinity but not helping his mate.

The little, and I do mean little, birds when hatched are fed by regurgitation, with the parent thrusting the long sharp bill down the young ones throat and pumping the food in by muscular contractions. As they grow older and are about ready to try their wings in a couple of weeks or so, the diet may be varied with the addition of spiders and a variety of small insects. Even after leaving the nest the parent may continue to feed them for a while longer before they are left entirely on their own.

Hummingbirds seem to prefer bright colored flowers such as trumpet creeper, turks-cap, honeysuckles, cannas, bottlebrush, hibiscus, etc. These birds readily make use of artificial feeders filled with a sugar solution, particularly if the feeder is painted a bright red or perhaps disguised to resemble a bright flower. A spoonful of sugar per day may be consumed by these little birds. Hummingbirds have a very high rate of metabolism as might be suspected from their rapid and almost continuous movements. In fact the movement of the wings in flight may be so rapid as to produce a blur with the individual wing beats being too fast for the human eye to follow.

The hummingbirds require relatively large amounts of food for their daily activity and must, of course, store up some fat for reserve energy before migrating. Incredible as it may seem the migration of these small creatures may take them across the Gulf of Mexico over several hundred miles of open sea where there is no opportunity to stop or rest. Their ability to overcome such hazards is another example of the marvelous adaption of birds in relation to their environment.

Illustration by Sidney A. Gauthreaux, Jr.

RETURN REQUESTED
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Photo by Bob Dennie

SHORE BIRDS, SONG BIRDS, MIGRATORY BIRDS LIVE IN HARMONY ALONG LOUISIANA COAST

Egrets In A Coastal Marsh

There are several species of egrets in Louisiana and they fascinate persons traveling through the marsh lands. Egrets are among the countless hundreds of species of birds and game birds that winter in the State and are also found in abundance throughout the year.